

Release notes for ENDF/B Development n-050_Sn_123
evaluation

ENDF
B-VII.dev

April 26, 2017

- checkr Warnings:

1. A previous error halted parsing of the current section
MAT=5058, MF= 1, MT=451 (1): Parsing stopped

```
ERROR(S) FOUND IN MAT=5058, MF= 1, MT=451
SECTION CANNOT BE CHECKED FROM SEQUENCE NUMBER      216 TO      266
```

- checkr Errors:

1. A variable is outside the allowed ENDF range
MAT=5058, MF= 1, MT=451 (0): Variable range

```
ERROR(S) FOUND IN MAT=5058, MF= 1, MT=451
MOD =      1 OUT OF RANGE      0 -      0      RECORD NUMBER      216
```

2. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 2, MT=151 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5058, MF= 2, MT=151
SECTION 2/151 NOT IN DIRECTORY      RECORD NUMBER      268
```

3. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 1 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 1
SECTION 3/ 1 NOT IN DIRECTORY      RECORD NUMBER      625
```

4. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 2 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 2
SECTION 3/ 2 NOT IN DIRECTORY      RECORD NUMBER      664
```

5. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 4 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 4
SECTION 3/ 4 NOT IN DIRECTORY      RECORD NUMBER      693
```

6. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 16 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 16
SECTION 3/ 16 NOT IN DIRECTORY      RECORD NUMBER      712
```

7. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 17 (0): Directory (b)

- | | | |
|---|---------------|-----|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 17 | RECORD NUMBER | 725 |
| SECTION 3/ 17 NOT IN DIRECTORY | | |
8. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 22 (0): Directory (b)
- | | | |
|---|---------------|-----|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 22 | RECORD NUMBER | 732 |
| SECTION 3/ 22 NOT IN DIRECTORY | | |
9. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 28 (0): Directory (b)
- | | | |
|---|---------------|-----|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 28 | RECORD NUMBER | 744 |
| SECTION 3/ 28 NOT IN DIRECTORY | | |
10. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 51 (0): Directory (b)
- | | | |
|---|---------------|-----|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 51 | RECORD NUMBER | 754 |
| SECTION 3/ 51 NOT IN DIRECTORY | | |
11. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 52 (0): Directory (b)
- | | | |
|---|---------------|-----|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 52 | RECORD NUMBER | 773 |
| SECTION 3/ 52 NOT IN DIRECTORY | | |
12. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 53 (0): Directory (b)
- | | | |
|---|---------------|-----|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 53 | RECORD NUMBER | 790 |
| SECTION 3/ 53 NOT IN DIRECTORY | | |
13. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 54 (0): Directory (b)
- | | | |
|---|---------------|-----|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 54 | RECORD NUMBER | 805 |
| SECTION 3/ 54 NOT IN DIRECTORY | | |
14. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 55 (0): Directory (b)
- | | | |
|---|---------------|-----|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 55 | RECORD NUMBER | 819 |
| SECTION 3/ 55 NOT IN DIRECTORY | | |
15. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 56 (0): Directory (b)

- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 56 | |
| SECTION 3/ 56 NOT IN DIRECTORY | RECORD NUMBER 833 |
16. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 57 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 57 | |
| SECTION 3/ 57 NOT IN DIRECTORY | RECORD NUMBER 846 |
17. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 58 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 58 | |
| SECTION 3/ 58 NOT IN DIRECTORY | RECORD NUMBER 859 |
18. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 59 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 59 | |
| SECTION 3/ 59 NOT IN DIRECTORY | RECORD NUMBER 871 |
19. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 60 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 60 | |
| SECTION 3/ 60 NOT IN DIRECTORY | RECORD NUMBER 883 |
20. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 61 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 61 | |
| SECTION 3/ 61 NOT IN DIRECTORY | RECORD NUMBER 895 |
21. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 62 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 62 | |
| SECTION 3/ 62 NOT IN DIRECTORY | RECORD NUMBER 906 |
22. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT= 91 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=5058, MF= 3, MT= 91 | |
| SECTION 3/ 91 NOT IN DIRECTORY | RECORD NUMBER 917 |
23. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT=102 (0): Directory (b)

- | | | |
|--|---|-------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 3, MT=102 | |
| | SECTION 3/102 NOT IN DIRECTORY | RECORD NUMBER 927 |
24. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT=103 (0): Directory (b)
- | | | |
|--|---|-------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 3, MT=103 | |
| | SECTION 3/103 NOT IN DIRECTORY | RECORD NUMBER 950 |
25. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT=104 (0): Directory (b)
- | | | |
|--|---|-------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 3, MT=104 | |
| | SECTION 3/104 NOT IN DIRECTORY | RECORD NUMBER 964 |
26. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT=105 (0): Directory (b)
- | | | |
|--|---|-------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 3, MT=105 | |
| | SECTION 3/105 NOT IN DIRECTORY | RECORD NUMBER 975 |
27. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 3, MT=107 (0): Directory (b)
- | | | |
|--|---|-------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 3, MT=107 | |
| | SECTION 3/107 NOT IN DIRECTORY | RECORD NUMBER 986 |
28. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 2 (0): Directory (b)
- | | | |
|--|--|--------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 2 | |
| | SECTION 4/ 2 NOT IN DIRECTORY | RECORD NUMBER 1003 |
29. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 16 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 16 | |
| | SECTION 4/ 16 NOT IN DIRECTORY | RECORD NUMBER 1180 |
30. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 17 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 17 | |
| | SECTION 4/ 17 NOT IN DIRECTORY | RECORD NUMBER 1191 |
31. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 22 (0): Directory (b)

- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 22 | |
| | SECTION 4/ 22 NOT IN DIRECTORY | RECORD NUMBER 1202 |
32. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 28 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 28 | |
| | SECTION 4/ 28 NOT IN DIRECTORY | RECORD NUMBER 1213 |
33. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 51 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 51 | |
| | SECTION 4/ 51 NOT IN DIRECTORY | RECORD NUMBER 1224 |
34. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 52 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 52 | |
| | SECTION 4/ 52 NOT IN DIRECTORY | RECORD NUMBER 1249 |
35. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 53 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 53 | |
| | SECTION 4/ 53 NOT IN DIRECTORY | RECORD NUMBER 1274 |
36. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 54 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 54 | |
| | SECTION 4/ 54 NOT IN DIRECTORY | RECORD NUMBER 1301 |
37. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 55 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 55 | |
| | SECTION 4/ 55 NOT IN DIRECTORY | RECORD NUMBER 1326 |
38. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 56 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 56 | |
| | SECTION 4/ 56 NOT IN DIRECTORY | RECORD NUMBER 1351 |
39. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 57 (0): Directory (b)

- | | | |
|---|---------------|------|
| ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 57 | RECORD NUMBER | 1376 |
| SECTION 4/ 57 NOT IN DIRECTORY | | |
40. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 58 (0): Directory (b)
- | | | |
|---|---------------|------|
| ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 58 | RECORD NUMBER | 1403 |
| SECTION 4/ 58 NOT IN DIRECTORY | | |
41. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 59 (0): Directory (b)
- | | | |
|---|---------------|------|
| ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 59 | RECORD NUMBER | 1426 |
| SECTION 4/ 59 NOT IN DIRECTORY | | |
42. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 60 (0): Directory (b)
- | | | |
|---|---------------|------|
| ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 60 | RECORD NUMBER | 1449 |
| SECTION 4/ 60 NOT IN DIRECTORY | | |
43. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 61 (0): Directory (b)
- | | | |
|---|---------------|------|
| ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 61 | RECORD NUMBER | 1472 |
| SECTION 4/ 61 NOT IN DIRECTORY | | |
44. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 62 (0): Directory (b)
- | | | |
|---|---------------|------|
| ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 62 | RECORD NUMBER | 1495 |
| SECTION 4/ 62 NOT IN DIRECTORY | | |
45. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 4, MT= 91 (0): Directory (b)
- | | | |
|---|---------------|------|
| ERROR(S) FOUND IN MAT=5058, MF= 4, MT= 91 | RECORD NUMBER | 1518 |
| SECTION 4/ 91 NOT IN DIRECTORY | | |
46. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 5, MT= 16 (0): Directory (b)
- | | | |
|---|---------------|------|
| ERROR(S) FOUND IN MAT=5058, MF= 5, MT= 16 | RECORD NUMBER | 1542 |
| SECTION 5/ 16 NOT IN DIRECTORY | | |
47. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 5, MT= 17 (0): Directory (b)

ERROR(S) FOUND IN MAT=5058, MF= 5, MT= 17
SECTION 5/ 17 NOT IN DIRECTORY RECORD NUMBER 1612

48. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 5, MT= 22 (0): Directory (b)

ERROR(S) FOUND IN MAT=5058, MF= 5, MT= 22
SECTION 5/ 22 NOT IN DIRECTORY RECORD NUMBER 1646

49. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 5, MT= 28 (0): Directory (b)

ERROR(S) FOUND IN MAT=5058, MF= 5, MT= 28
SECTION 5/ 28 NOT IN DIRECTORY RECORD NUMBER 1788

50. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5058, MF= 5, MT= 91 (0): Directory (b)

ERROR(S) FOUND IN MAT=5058, MF= 5, MT= 91
SECTION 5/ 91 NOT IN DIRECTORY RECORD NUMBER 1863

• recent Warnings:

1. Fission widths given for non-fissile nucleus, but are zero
0: Fission?

```
Calculate Cross Sections from Resonance Parameters (RECENT 2015-1)
=====
Retrieval Criteria----- MAT
File 2 Minimum Cross Section- 1.0000E-10 (Standard Option)
Reactions with No Background- Output (Resonance Contribution)
... [615 more lines]
```

• fudge-4.0 Warnings:

1. The URR for this spin group needs higher energy resolution for correct representation of the average cross section
resonances / unresolved (Error # 0): URRinsufficientEnergyGrid

```
WARNING: More points needed in L=0 J=5.0 unresolved widths between 22. eV and 1.e2 eV
WARNING: More points needed in L=0 J=6.0 unresolved widths between 22. eV and 1.e2 eV
WARNING: More points needed in L=1 J=4.0 unresolved widths between 22. eV and 1.e2 eV
WARNING: More points needed in L=1 J=5.0 unresolved widths between 22. eV and 1.e2 eV
... plus 8 more instances of this message
```

2. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 0: total (Error # 0): CS Sum.

```
WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.80%
```

3. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 1: (z,n) (Error # 0): CS Sum.

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.12%

- fudge-4.0 Errors:

1. Calculated and tabulated Q values disagree.
reaction label 14: n[multiplicity:'2'] + Sn122 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -5853488.863174438 eV vs -5.9511e6 eV!

2. Calculated and tabulated Q values disagree.
reaction label 15: n[multiplicity:'3'] + Sn121 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -14666679.82244873 eV vs -1.47714e7 eV!

3. Calculated and tabulated Q values disagree.
reaction label 16: n + H1 + In122 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -11439733.48986816 eV vs -1.15146e7 eV!

4. Calculated and tabulated Q values disagree.
reaction label 17: Sn124 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 8579947.568939209 eV vs 8490390. eV!

5. Calculated and tabulated Q values disagree.
reaction label 18: n + He4 + Cd119 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -6245544.843017578 eV vs -6012890. eV!

6. Calculated and tabulated Q values disagree.
reaction label 19: H1 + In123_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -3519565.873428345 eV vs -3598520. eV!

7. Calculated and tabulated Q values disagree.
reaction label 20: H2 + In122_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -9215167.388931274 eV vs -9204510. eV!

8. Calculated and tabulated Q values disagree.
reaction label 21: H3 + In121_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -8765546.222717285 eV vs -8853460. eV!

9. Calculated and tabulated Q values disagree.
reaction label 22: He4 + Cd120_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 1892344.602981567 eV vs 1814210. eV!

- njoy2012 Warnings:

1. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (0): GROUPE/conver (0)

---message from conver---cannot do complete particle production for mt= 16
only mf4/mf5 provided

2. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (1): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 17
only mf4/mf5 provided

3. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (2): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 22
only mf4/mf5 provided

4. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (3): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 28
only mf4/mf5 provided

5. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (4): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 91
only mf4/mf5 provided